Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions	GN Docket No. 12-268

REPLY COMMENTS OF McBRIDE SPECTRUM PARTNERS, LLC ON PUBLIC NOTICE TO SUPPLEMENT THE RECORD ON THE 600 MHz BAND PLAN

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June 22, 2013

Before the
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EXECUTIVE SUMMARY

McBride Spectrum Partners, LLC ("McBride") submits these Comments in response to the Public Notice released May 17, 2012 in the above captioned proceeding seeking to supplement the record on the 600 MHz band plan in connection with upcoming incentive auctions authorized by the Middle Class Tax Relief and Job Creation Act of 2012. I applaud the efforts of the Acting Chairwoman, Mignon Clyburn of the Federal Communications Commission and the Commission. I also would like thank Ruth Milkman Chief, Wireless Telecommunications Bureau and Tom Peters Chief Engineer, Wireless Telecommunications Bureau and all of the staff at the Wireless Telecommunications Bureau for all of the hard work regarding the many issues surrounding the upcoming voluntary 600 MHz incentive auctions.

McBride, would like to also thank the Commission for the opportunity to submit our comments to the Commission for consideration . As the Commission knows the incentive auctions is the first of its kind and I feel very confident that the Commission is on track to making the 600 MHz incentive auctions extremely successful. I am sure the auction will set a new world record as the biggest revenue auction of any kind. The Commission still has a lot of hard work to do in making sure that the 600 MHz spectrum auction will be a win -win for everyone involved especially the American consumer. I hope my comments will help the Commission to make better decisions and will help make the 600 MHz auction very successful. McBride agrees with the majority of commenters in supporting a 600 MHz band plan that would clear broadcast television stations starting at Channel 51 and expand downward. McBride strongly support the "Down from 51" band plan.[1] As a stakeholder who currently holds an A

[1] 1 Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, Notice of

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Block 700 MHz. license and as a designated entity who has participated in FCC spectrum auction numbers 5, 22, 35, 44, 49, 73 and 92 winning licenses in all but one of the auctions. With over twenty years of FCC spectrum auction expertise and experience I have personally witnessed **the good, the bad and the ugly** of auction rulemaking decisions from FCC Chairman Reed Hunt's, Entrepreneurs C Block ("NextWave") to Chairman, Julius Genachowski's 700 MHz A Block auction ("Interoperability") to the present day incentive auctions.[2] I feel that many of the past mistakes could've been avoided.[3] Many of the past blunders was avoidable in advance and was predicted in the comments now part of the public record.[4] Many comments speculate that beltway politics have blinded past decisions. The Commission has also made good decisions like bidding credits for small business and anonymous bidding rules to end collusion in the FCC auctions. At the same time I have observed the many mistakes regarding the FCC spectrum auctions ending-up with ramifications going well beyond the auction rules like not having mandatory interoperability as part of the 700 MHz rules.

By its very nature spectrum auctions involves billions of dollars and very high risk. When you have large sums of money involved someone will always try to gain an nano edge to game the system and extract value on someone else's dime. People by nature will try to exploit the rules and walk on the

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Proposed Rulemaking, 27 FCC Rcd 12357 (2012) (NPRM). In response to the NPRM, over 400 interested parties filed comments. See GN
Docket No. 12-268.

[2] In these cases, we decide whether §525 of the Bankruptcy Code,11 U.S.C. § 525 prohibits the Federal Communications Commission (FCC or Commission) from revoking licenses held by a debtor in bankruptcy upon the debtor's failure to make timely payments owed to the Commission for purchase of the licenses.

[3] FCC v.NEXTWAVE PERSONAL COMMUNICATIONS INC. JUSTICE SCALIA delivered the opinion of the Court. In these cases, we decide whether §525 of the Bankruptcy Code, 11 U. S. C. §525, prohibits the Federal Communications Commission (FCC or Commission) from revoking licenses held by a debtor in bankruptcy upon the
debtor's failure to make timely payments owed to the Commission for purchase of the licenses

[4] Promoting Interoperability in the 700 MHz Commercial Spectrum, Notice of Proposed Rulemaking, WT Docket No. 12-69, FCC 12-31 (rel. Mar. 21, 2012) ("NPRM")

legal edge. Las Vegas or Wall Street is a study that help you understand how people will attempt to circumvent the rules of any game that involves large sums of money. The more complex the rules and the more uncertainties, the more nebulous the easier it is for the deep-pocket players to find opportunities to exploit the rules. Auction rules will have problems and the solutions for these problems may not be so easy to see in advance and solve after its to late. I have found that the simpler and less complex the rules the easier the rules are to enforce. Like RED or Green . Yes or No. Take the U.S income tax code is a good example of this idea all 73,608, pages of the tax code are very complex but that turns out to be very good for a deep pocket company like Verizon Wireless with $115 billion in revenue last year and minus $-660 million tax bill. The same income tax code on the other hand may not be so good for the postal worker who automatically has 25% taken out of their paycheck. The postal worker would be lucky to have the money to pay their cell phone bill. Still the Commission must select, craft and implement auction rules that are fair to AT&T and a very small business at the same time. This is not so easy to do . No solution will be problem free or will everyone be happy and all licensing mechanisms and auction rules will contain the potential for abuse. A risk-free auction mechanism is illusionary as in life itself, nothing in life is ever risk-free.

Small Business

In designing auctions for spectrum licenses, the FCC is required by law to meet multiple goals and not focus simply on maximizing receipts. Those goals include ensuring efficient use of the spectrum, promoting economic opportunity and competition, avoiding excessive concentration of licenses, preventing the unjust enrichment of any party, and fostering the rapid deployment of new services, as well as recovering for the public a portion of the value of the spectrum. According to a rigorous economic analysis of the last ten years of FCC auctions by Dr. Gregory Rose, an expert in game theory, the FCC has failed to meet many of the congressional goals.[5]

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[5] The Failure of FCC Spectrum Auctions Gregory F. RoseMark Lloyd May, 2006.

Dr. Rose's careful analysis of the auctions reveals a significant skew of auction outcomes have favored a small subset of bidders – and those bidders are not small entrepreneurs. There is a tendency for some bidders to prevail in multiple auctions, and there has been a measurable increase in the market power of large media corporations. Furthermore, the FCC procedure of simultaneous, multi-stage auctions over multiple items is subject to manipulation by tacit collusion among bidders, avoidance of head-to-head competition by the best capitalized and most successful bidders, and preemptive bidding strategies. This results in the wealthy bidders winning valuable rights to spectrum at significantly lower prices than other bidders.

Finally, while Congress specifically mandated that the FCC use spectrum auctions to increase economic opportunity for small businesses, women and minorities, there is no evidence that these auctions have significantly increased opportunity for any of these "designated entities." An independent study funded by the FCC indicates that "minority and women applicants were less likely to win at least one license than were non-minority applicants [and] Minorities and women qualified for auctions at significantly lower rates than non-minorities.

The Commission Should Limit How Much Spectrum One Carrier Can Win in the FCC 600 MHz Spectrum Auction

The Commission should put a absolute limit on the number of 600 MHz licenses any one company can win in the incentive 600 MHz spectrum auctions .[6] The FCC's best defense against changes it can

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In 1993 Congress gave the Commission authority to use competitive bidding to choose from among two or more mutually exclusive applications for an initial license.
U.S. Government, Congressional Budget Office, The Budget and Economic Outlook: Fiscal Years 2001-2010(Washington, D.C., 2000), Appendix B.

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United States of America, Department of Justice, Antitrust Division, et. al. vs. AT&T Inc., T-Mobile USA, Inc., and Deutsche Telekom AG, Amended Complaint, Civil Action No. 11-01560 (ESH) at ¶ 36; see http://www.justice.gov/atr/cases/f275100/275128.pdf.

neither predict nor control is the widest possible field of bidders in the auction. All of all the licenses should be sold as paired 5 MHz x 5 MHz CMA Blocks and no one company should be allowed to buy more than two (2) 5 MHz X 5 MHz CMA Blocks. If the Commission recovers 70 MHz. of spectrum 35 MHz DL and 35 MHz UL from the broadcasters for the incentive auctions the Commission will have seven paired 10 MHz CMA, licenses to sell in each CMA market. "Imposing constraints on the number licenses any one company can win in the 600 MHz spectrum auction will promote competition, increase consumer choice, encourage innovation, and accelerate broadband deployment."[7] By imposing a hard limit on the number of licenses any one company can bid on in any one CMA market to no more than two licenses per CMA market for each bidder in the auction. [8]This would almost guarantee no less than 3 companies will win licenses in each CMA market and as many as 7 companies winning licenses in each of the CMA markets. The lesson is that small bidders can do extremely well in an auction against the larger carriers if the markets are small in size like CMA markets and useful bidding credits. One of the keys to the success of the small bidders was the availability of spectrum that covered areas that matched their needs. Small business did not have to pay for licenses that were too big for them to fund. Maximize the attractiveness of the spectrum and the success of the auction by creating 10 MHz paired blocks in CMA market sizes suitable for small carriers to bid on in FDD operations. Maximize the number of small carries that take part in the auction by arming them with generous bidding credits as much as 50% in bidding credits for nano size small business in order to level the playing field against the AT&T and Verizon 's of the world. Maximize the number of small carries

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T-Mobile proposes sliding spectrum screen rule for 600 MHz auction Fierce Wireless
http://www.fiercewireless.com/story/t-mobile-proposes-sliding-spectrum-screen-rule-600-mhz-auction

8 The Impact of Bidding Eligibility Conditions on Spectrum Auction Revenues
ByMartyn Roetter, D.Phil. & Alan Pearce, Ph.D.
INFORMATION AGE ECONOMICS Washington, D.C.

that take part in the 600 MHz incentive auctions by mandating interoperability in the entire 600 MHz and 700 MHz spectrum bands from the start. Maximize the opportunities for small carries by making sure you have anonymous bidding. Maximize the number of small carries that can win licenses in the auction with start -up and small business build-out requirements based on the population covered by at the end of 10 year license.[9]

[9] **Competitive Carriers Association** The nation's two largest wireless carriers have acquired vast amounts of "beachfront" spectrum below 1 GHz while largely avoiding competitive scrutiny. Promoting Competition, Curtailing Excessive Market Power June 2013

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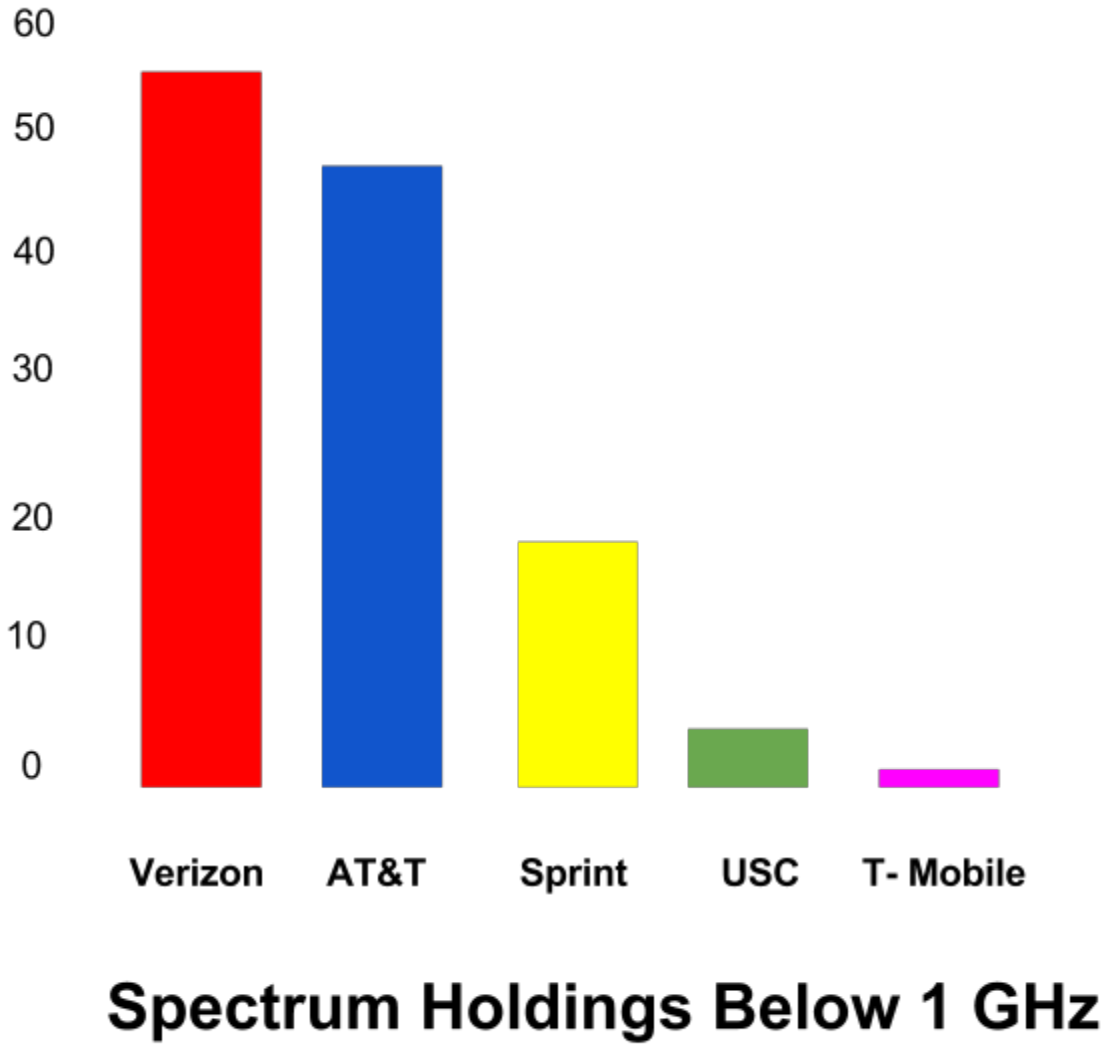

Interoperability

I will like to point out the hurdle small business now have to climb to surmount the barrier that AT&T has constructed to constrict small players like myself from moving forward in our quest to provide services in the 700 MHz A Block. [10] The barrier that is now standing in our way is interoperability . As any

[10] 700 MHz mobile spectrum: A sad tale of regulatory and interoperability failure

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Wharton school dropout will tell you that a mobile network must have the ability to offer customers national roaming. Today's customers demand a choice of the latest in mobile phones and devices. Developing a sound business case without interoperability is almost impossible. Customers would be limited to making only local telephone calls. The lack of interoperability prevents A Block licensees from the enjoying the benefits of a low cost 700 MHz ecosystem. Small businesses are being squeezed by the economies of scale that a healthy ecosystem would provide and are now put at a great competitive disadvantage.[11] The decision by the Commission to extend the interim construction benchmark dates for lower 700 MHz Band A Block licensees.[12] The lack of interoperability in the 700 MHz band is an absolute **barrier to entry** for small businesses.[13] McBride concurs with the following comments of Rural Telecommunications Group, Inc. ("RTG") regarding interoperability in the entire 700 MHz spectrum Band " correcting the industry-wide problem of a lack of interoperability for LTE devices involves a simple, two-part solution. First, the Commission must issue an order requiring that all mobile devices manufactured for operation in the Lower 700 MHz Band be fully interoperable across

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By Neal Gompa on May 1, 2013 at 9:00 am

[11] Comments of Leap at see Comments of CCA at 16 ("[T]he balkanization of the 700 MHz band has resulted in a device ecosystem controlled by one carrier, AT&T, in a manner that has sharply impeded competition and has slowed deployment of LTE services to consumers."); Comments of MetroPCS at 28 ("[T]he lack of interoperability across the Lower 700 MHz Band has significantly delayed deployment… Competitive carriers, who are starved for spectrum, are unable to use the spectrum already in their hands, while their customers are denied the benefits of improved coverage or advanced wireless services that such spectrum would provide."); Comments of Cellular South at 8 ("Operators who have sought to incorporate Lower A Block spectrum into their deployments have been thwarted by an inability to acquire devices from vendors that could interoperate across all Lower 700 MHz networks.").

[12] In the Matter of Wireless Telecommunications Bureau Seeks Comment on Requests for Waiver and Extension of Time to Construct 700 MHz A and B Block Licenses, Public Notice, "Wireless Telecommunications Bureau Extends 700 MHz A Block Licensee Interim Construction Benchmark Deadline Until December 13, 2013," WT Docket No. 12-332, DA 13-210 (released February 13, 2013).

[13] In the Matter of Expanding Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, **Statement by Commissioner Mignon L. Clyburn,** GN Docket No. 12-268, FCC 12-118 (released October 2, 2012).

all paired spectrum within that band.[14] The Commission's notice of proposed rulemaking on mobile device interoperability in the 700 MHz Band has been open for over a year, and the device procurement difficulty experienced by small and rural carriers has snowballed into delayed LTE network launches and fewer retail choices for consumers, all of which is harmful to effective competition. The second part of the solution to help reduce the atmosphere brought upon by multiple band classes covering multiple frequencies is to have the Commission mandate that all devices that will be operational in any commercial mobile wireless spectrum auctioned past and future, including the 600 MHz Band, and 700 MHz be fully interoperable across the entire licensed band. Commission policies should be designed to benefit America's paying consumers, and rules mandating universal mobile device interoperability within a particular spectrum band do just that by allowing a consumer to more easily port a device away from one service provider to another. When the element of device interoperability is removed from a consumer's equation on what device to choose, he or she can then focus on the truly important distinguishing elements such as price, customer service, and local coverage. If a carrier, whether large (like AT&T and Verizon Wireless) or small (like RTG members) is unable to provide the services that truly matter to a paying subscriber, that customer should have the freedom to bring his or her mobile device to a competing carrier and not feel like a hostage solely because that recently purchased (an expensive) smartphone or tablet does not work on adjacent frequencies. RTG is confident that once intra-band device interoperability becomes common place, one barrier to entry for carriers will be erased and one barrier to migration for consumers will also disappear. With just a few modest changes to a handful of policies, the Commission can drastically reduce barriers to competition that for the last few years have hindered the full potential of the mobile wireless industry."

[14] In the Matter of Wireless Telecommunications Bureau Seeks Comment on Requests for Waiver and Extension of Time to Construct 700 MHz A and B Block Licenses, Public Notice, "Wireless Telecommunications Bureau Extends 700 MHz B Block Licensee Interim Construction Benchmark Deadline Until December 13, 2013," WT Docket No. 12-332, DA 13-680 (released April 10, 2013).

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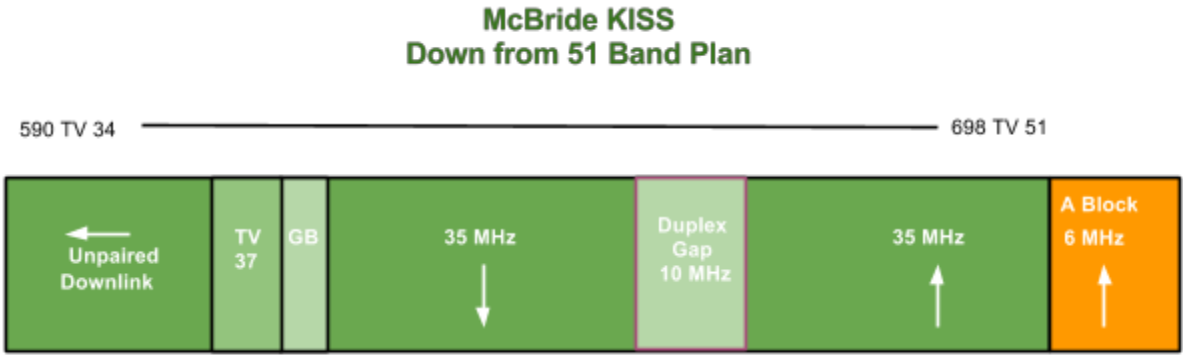

Down from 51 Band Plan

After the information FCC 600 MHz workshop and reading many of the comments and studying the band plans details that have been put on the board McBride believes that a simple "Down from 51 Plan" is the overall best plan. The "Down from 51" approach seems to me to be the clear winner from the comments that I have read so far. McBride along with many other small business already have spectrum in the 700 MHz. A Block. The licenses that are 6 MHz times 6 MHz wide. Because of the fast growth in data demands in just the past few years many of the small carriers that serve rural America will need more spectrum and may want to take this opportunity to participate in the upcoming 600 MHz incentive auctions.[15] LTE Advanced mobile network will have data speeds reaching 150 Mbps will require a minimum of 20 MHz of LTE spectrum 2 channels of 10 MHz each one uplink and one 10 MHz downlink channel. [16] The "Down from CH 51" will help small carries by saving valuable

[15] SAN JOSE, Calif. Feb. 14, 2012 – According to the Cisco® Visual Networking Index (VNI) Global Mobile Data Traffic Forecast for 2011 to 2016, worldwide mobile data traffic will increase 18-fold over the next five years, reaching 10.8 exabytes per month -- or an annual run rate of 130 exabytes -- by 2016.

[16] South Korean operator SK Telecom said it launched an LTE-Advanced network on Wednesday, offering speeds

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A Block spectrum that would otherwise be used as a guard band between CH 51, and CH 52 ("A Block Band 12") The "Down from 51" plan would clear CH 51 and allowed 12 MHz of valuable A Block spectrum Band 12 in the lower 700 MHz to be used for mobile broadband services. The A Block spectrum has been mostly dormant except for the 6 MHz uplink being used as a guard band by AT&T who keeps on squealing like a baby piglet about interference from Ch 51. AT&T crying about interference is pure rubbish. Since 2008 most of the A Block 700 MHz Band 12 spectrum is not being used including 25 A Block licenses which covers over 65 % of U.S which Verizon owns and controls. Down from Ch51 band plan bring more certainty and to the lower 700 MHz A Block spectrum as well as the incentive auctions.[17] The Down from 51 band plan ensure the incentive auction will be a success and will maximum the spectrum that is made available via the incentive auctions. MetroPCS also noted that paired blocks are "critical to support new entrants" because "having both uplink and downlink spectrum is an obvious necessity, and auctioning spectrum in unpaired blocks risks discouraging new entrants from bidding in the auction, lest they become stranded with a lone block of uplink or downlink spectrum."[18] Most of the comments support the Down from 51 band plan. [19]

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of up to 150Mbps on an upgraded version of Samsung's Galaxy S4 handset.The carrier used a technology called Carrier Aggregation, which can combine different frequencies on a mobile network, to create an effective 20MHz spectrum band by combining two smaller channels. Much faster speeds are coming - the current standards allow for up to five 20MHz bands to be combined.

[17] See, e.g., Letter from AT&T Inc., National Association of Broadcasters, T-Mobile, Intel Corporation, Qualcomm, and Verizon Wireless to Gary Epstein and Ruth Milkman, FCC (Jan. 24, 2013); Comments of T-Mobile USA, Inc. at 10-13; Reply Comments of Ericsson at 13-29. See also, NPRM, 27 FCC Rcd at 12421, para. 178. Depending on the quantity of spectrum that is repurposed, the downlink band could be situated on both sides of channel 37 (assuming existing channel 37 operations remain on that channel).

[18] Comments of MetroPCS at 21; see Comments of T-Mobile at 5-6 ("Absent a paired allocation, new and expanding entrants would need to spend considerable resources acquiring the downlink portion without any assurance that they could acquire the return-link spectrum in other bands. The resulting exposure risk would deter auction participation…").

[19] 2 Comments of AT&T, GN Docket No. 12-268, 7 (filed June 14, 2013) ("AT&T Comment") (The Down from 51 plan "provides the best arrangement of scarce spectrum resources."); Comments of CIT Group Inc., GN Docket No. 12-268, 3 (filed June 14, 2013) (arguing that the Down from 51 plan will increase private funding at auction); Comments of Consumer Electronics Association, GN Docket No. 12-268, 1 (filed June 14, 2013) ("Consumer Electronics Association Comment") ("The Down from 51 consensus

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Vulcan and SkyHigh

"Vulcan and SkyHigh Endorse the adoption of the Down from 51 band plan because it allows for the allocation of more spectrum, will cause less interference with other services, and uses spectrum more efficiently. A majority of other commenters support the Down from 51 band plan"

Alcatel-Lucent

"A rigorous review of band plan variability and efficiency favors the FDD Down from 51 band plans that include upper 600 MHz uplink adjacent to lower 700 MHz. In sum, in our comparison of FDD plans, the traditional Down from 51 band plans are more spectrally efficient above 60 MHz cleared than

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approach resolves several technical issues and advances the public interest."); Comments of CTIA—The Wireless Association, ® GN Docket No. 12-268, 6 (filed June 14, 2013) ("CTIA Comment") ("By selecting a 'Down from 51' approach, the FCC will be best positioned to maximize paired, licensed spectrum above TV 37."); Comments of GE Healthcare, GN Docket No. 12-268, 6 (filed June 14, 2013) ("GE Healthcare Comment") ("With patient safety on the line, the Commission should avoid possible interference from mobile uplink operations to wireless medical telemetry and adopt a Down from 51 plan."); Comments of Mobile Future, GN Docket No. 12-268, 4 (filed June 14, 2013) ("Mobile Future Comment") (arguing that the Down from 51 plan "would facilitate clearing as much 600 MHz spectrum as possible"); Comments of Motorola Mobility LLC, GN Docket No. 12-268, 1 (filed June 14, 2013) ("Motorola Mobility Comment") (concluding that the Down from 51 plan is superior "with respect to both interference protection and handset design"); Comments of National Cable & Telecommunications Association, GN Docket No. 12-268, 8-9 (filed June 14, 2013) ("National Cable & Telecommunications Association Comment") (supporting the Down from 51 plan); Comments of Qualcomm, Inc., GN Docket No. 12-268, 3-4 (filed June 14, 2013) ("Qualcomm Comment") (asserting that the Down from 51 bandplan is "most readily integrated into existing smartphone and table form factors"); Comments of Research in Motion, GN Docket No. 12-268, 1 (filed June 14, 2013) ("Research in Motion Comment") (advocating for the adoption of the Down from 51 plan); Comments of Spectrum Management Consulting, GN Docket No. 12-268, 10-11 (filed June 14, 2013) ("Spectrum Management Comment") (urging the Commission to adopt the Down from 51 plan because it avoids introducing inefficiencies into the 600 MHz band plan and protects the existing uses of the Lower 700 MHz spectrum); Comments of Telecommunications Industry Association, GN Docket No. 12-268, 5 (filed June 14, 2013) (concluding that the Down from 51 plan "represents the best collective engineering judgment not just of equipment manufacturers, but also of other companies affected by the auction"); Comments of the WMTS Coalition, GN Docket No. 12-268, 5 (filed June 14, 2013) ("WMTS Coalition Comment") (noting that the Down from 51 plan avoids the problem of creating interference to medical telemetry devices); Comments of Verizon and Verizon Wireless, GN Docket No. 12-268, 2 (filed June 14, 2013) ("Verizon and Verizon Wireless Comment") (joining "various other wireless stakeholders in supporting" the Down from 51 band plan). 3See e.g. A

the Down from 51 Reversed plan. The Down from 51 Reversed band plan only becomes more spectrally efficient than other FDD plans between 42 and 48 MHz cleared, when the Reversed band plan continues to offer SDL blocks and other FDD plans offer only unpaired uplink. “,

Ericsson

“Ericsson’s proposed band plan assumes a minimum of 12 broadcasting channels (72 MHz) would be cleared with a net of five, 5x5 MHz pairs (i.e., 50 MHz of licensed spectrum for mobile broadband Ericsson fully supports actions that maximize licensed spectrum for mobile wireless broadband and that live up to the recommendation of the National Broadband Plan to repurpose 120 MHz of television spectrum for mobile wireless broadband. amount of information on many of the questions in the Public Notice and should form the basis of final rules in this area. Ericsson supports a band plan that re-allocates a contiguous band of licensed spectrum from Channel 51 downwards, nationwide. Specifically Ericsson reiterates its support for its proposed FDD or TDD band plans described in its Reply Comments that maximize the amount of spectrum in a given geographical area, and that address associated interference concerns. We also recognize the allocation of operating bands with passbands supported by today’s technology and at the same time consider the amount of guardband required. When other countries look at the U.S. lead in the allocation of the 600 MHz band, they will look to the U.S. for guidance on the band plan as well. Therefore a band plan that can address global harmonization would achieve economies of scale.”

Verizon Wireless

Verizon has joined various other wireless stakeholders in supporting a band plan approach (the “Industry Consensus Proposal”) that locates paired uplink spectrum adjacent to the 700 MHz block, incorporates a duplex gap that is no larger than is technically necessary, and locates downlink operations on the other side of the duplex gap.

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CIT Group Inc.

"The Commission's incentive auction plan is audacious in scope, creativity and complexity. So much so that it may be on the verge of becoming incomprehensible to many of those whom the Commission should view as stakeholders. The Supplemental Notice, with its preference for the theoretical over the practical, settles nothing, but only adds to the unknowns. CIT urges the Commission to eschew complexity and flexibility in favor of simplicity and consistency. It should reject any band plans that rely on spectrum below Channel 37, and instead, adopt a relatively simple "Down from 51" band plan that can be implemented utilizing present technology, and without undue cost. Not only will such a relatively simple band plan present the highest value at auction, it also will enjoy the benefit of reduced implementation costs; savings that will both attract capital and be available for bidders to use in the forward auction. Ultimately, making the maximum amount of capital available for use at auction will be the key to the financial success of the incentive auction, and will redound to the benefit of all auction participants, including the Commission, television stations and forward bidders."[20]

CTIA

"As indicated in the Public Notice, a "Down from 51 Reversed" band plan would involve the clearing of broadcast television channels starting at Channel 51 and expanding downward.23 The downlink band would begin after a guard band at Channel 51, followed by a duplex gap, and finally the uplink band. CTIA opposes this band for two reasons: (1) the frequencies adjacent to Channel 51 are much better suited for uplink spectrum, not downlink, and (2) this band plan would limit the amount of new, licensed spectrum made available by requiring an additional guard band that would not be necessary under a traditional "Down from 51" plan.22 See Public Notice. 23 Id. at 3.10 As an initial

[20] Comments of Qualcomm Incorporated, filed January 25, 2013 ("Qualcomm Comments"), and Reply Comments of Qualcomm Incorporated, filed March 12, 2013 ("Qualcomm Reply").

matter, CTIA opposes the "Down from 51 Reversed" band plan because it fails to capitalize on the technical characteristics of the upper portion of the UHF band that make this spectrum ideally suited to support uplink operations. Qualcomm, for example, analyzed the signal harmonics and intermodulation distortion generated by 600 MHz transmitters and concluded that the uppermost 25 MHz of the UHF would be best suited for mobile uplinks because harmonics in this band would be least likely to impact other services.24 This spectrum is also less likely to result in intermodulation distortion. Qualcomm is not the only party to reach the conclusion that the upper portion of the UHF band is best suited for uplink. Indeed, manufacturers and wireless providers that support at "Down from 51" approach uniformly have mobile uplinks adjacent to the Lower 700 MHz A Block mobile uplink band.25 CTIA cannot find a single party in the record that supported the idea of placing mobile downlinks in spectrum adjacent to mobile uplinks as suggested in the "Down from 51 Reversed" proposal due to the significant interference issues associated with dissimilar wireless operations in adjacent spectrum as well as the inefficiencies (extra guard band requirements) associated with this plan."[21]

WMTS Coalition

"The Coalition recognizes that it may not be best positioned to choose among band plans in determining the most efficient approach for maximizing the use of new wireless telecommunications allocations. We do note, however, that the consensus "Down from 51" plan -- which has widespread support from a variety of interested stakeholders – seems to be the one plan that is likely to have a less severe impact on Channel 37. Even if the Commission was particularly successful in re-gaining more than 84 MHz of spectrum for wireless telecommunications services in its incentive

[21] CTIA agrees with the Commission that placing uplink and downlink operations in adjacent spectrum would result in significant harmful interference to the operations in this spectrum. Further, the wireless industry has made clear the need to protect the A Block from harmful interference caused by operations on TV Channel 51. Regardless of the band plan adopted in this proceeding, CTIA strongly supports any effort to ensure that Channel 51 is cleared so as to facilitate 700 MHz A Block use and that the Channel 51 mistake is not repeated in the 600 MHz band.

auction, at least adjacent uses would be in the downlink allocation, and not for mobile or uplinked operations. On that basis, alone, the Coalition believes the "Down from 51" plan would be far preferable to any of the alternative band plans identified in the Supplemental PN."[22]

Motorola Mobility LLC

"As further detailed below, Motorola Mobility reiterates its support for the previously described "Down from Channel 51" band plan,3 which is superior to the other alternatives raised to date in this proceeding with respect to both interference protection and handset design." [23]

Cellular South

"The Commission should immediately clear Channel 51. The Commission must clear Channel 51 before or through the incentive auction process. Deployments on the Lower 700 MHz A Block have been delayed by FCC rules requiring mobile broadband deployments on the A Block to unnecessarily "keep-out" of a significant area around Channel 51 stations. To facilitate the broadest possible deployments in both 600 MHz and the Lower 700 MHz spectrum, The Commission should eliminate the unnecessary "keep-out" zones and clarify that Channel 51 will be the first channel cleared in any market and used as a guard band in a TDD band plan. Additionally, the Commission should also consider clarifying whether Channel 51 broadcasters who voluntarily vacate the channel would still be

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22 Supplemental PN at 1-2. Under this Down from 51 plan, the Commission would clear broadcast television channels starting at channel 51 and allocate downward, with the uplink band beginning at channel 51, followed by a so-called "duplex gap," followed by the downlink band, with the balance of the available spectrum being retained for broadcast use.

23 The Incentive Auctions NPRM detailed an "alternative" band plan proposal, known as the "Down from Channel 51" band plan, that would clear broadcast channels starting at channel 51 and expand downward, organizing the spectrum in an uplink portion, a downlink portion, and a guard band, with a duplex gap between the uplink and downlink bands. Incentive Auction NPRM at ¶ 178.

entitled to recover auction revenues for Channel 51. “

United States Cellular Corporation

“USCC also joins the majority of commenters in supporting a 600 MHz band plan that would clear broadcast television stations starting at Channel 51 and expand downward.7 Specifically, USCC supports the “Down from 51 hybrid” band plan proposal discussed during the Commission’s 600 MHz Band Plan Workshop held on May 3, 2013.8 And, for small and regional carriers and the customers they serve in rural and other underserved areas, as well as for promoting much-needed competition in the wireless industry, the single most critical component of the 600 MHz band plan will be a clear, ex ante interoperability requirement.79 In addition, USCC supports a “Down from 51 hybrid” band plan because it would, among other potential benefits, diminish the interference risks to both wireless carriers and broadcasters associated with television stations operating in the duplex gap, prevent another situation like that still being faced by Lower 700 MHz A Block licensees with respect to Channel 51 broadcasters, and maximize the amount of paired spectrum.”

T-Mobile

“T-Mobile continues to believe that its 35x35 MHz Down from 51 Band Plan represents the best balance between maximizing the amount of spectrum available for auction and minimizing the potential for harmful interference. While there are technical and practical challenges associated with the Down from 51 Band Plan, in T-Mobile’s view those challenges are entirely manageable; at the same time, the benefits from such a plan are substantial. By maximizing the amount of sought-after paired spectrum available for bidding, minimizing guard bands and taking full advantage of the efficiencies associated with a relatively compact configuration, T-Mobile’s 35x35 MHz Down from 51 Band Plan offers the optimum spectrum configuration for a successful 600 MHz auction next year and for robust competition in the wireless marketplace in the future. With so much promise in the incentive auction, the Commission

should not, and need not, settle for a "second-best" band plan."

Qualcomm

"Qualcomm has conducted extensive and multifaceted technical studies of the 600 MHz band to determine how best to incorporate the band into today's smartphones and other mobile devices that consumers love. These studies have confirmed and reconfirmed what Qualcomm originally proposed – that the superior use for this band is the straight DF51 FDD band plan, comprised of a 25 MHz uplink band (located directly adjacent to the Lower 700 MHz A block), followed by a 10 MHz duplex gap and then a 25 MHz downlink band. Based on its detailed and multifaceted technical analyses conducted over the past nine months, Qualcomm is at this point in time even more confident about the technical feasibility of using the 600 MHz band for FDD operations, that is, with 2 x 25 MHz situated in the uppermost portion of the band along with a 10 MHz duplex gap, with any additional spectrum allocated for Supplemental Downlink ("SDL") operations."[24]

Spectrum Management Consulting Inc

"While soliciting additional feedback regarding the 600 MHz band plan represents an important part of the deliberative process, the "Down from 51" band plan remains the best alternative for the incentive auction. The "Down from 51" plan places 700 MHz and upper 600 MHz uplink bands next to one another, which eliminates the need for guard bands, eliminates the possibility of base-to-base or mobile-to mobile interference, and promotes efficient spectrum use that will allow for

[24] See, e.g., Hossein Falaki, et al. "A First Look at Traffic on Smartphones" IMC 2010 Melbourne (Nov. 2010) (uplink traffic volume measured to be more than 10 times the downlink traffic for certain users, with a average uplink to downlink ratio of 6:1).
Qualcomm also is concerned that creating additional FDD pairs in any portion of the lower nineteen analysis blocks of the 600 MHz band would not be a successful arrangement. Doing so would create a stark inequality between the lower FDD pairs and the straight DF51 2 x 25 MHz FDD pair at the upper end of the 600 MHz band that does not cause interference to other bands that may be in simultaneous use on the device.

maximum flexibility 11 and certainty in the mobile marketplace. Therefore we urge the Commission to adopt the originally conceived "Down from 51" band plan."

Cellular South, Inc.

"The Commission should immediately clear Channel 51.The Commission must clear Channel 51 before or through the incentive auction process. Deployments on the Lower 700 MHz A Block have been delayed by FCC rules requiring mobile broadband deployments on the A Block to unnecessarily "keep-out" of a significant area around Channel 51 stations. To facilitate the broadest possible deployments in both 600 MHz and the Lower 700 MHz spectrum, and a successful incentive auction.

Key Points for a

Successful 600 MHz Spectrum Incentive Auction.

- Interoperability Mandate Across the Entire 700 MHz. 1 Year From Date of End of Auction.
- Interoperability Mandate Across Entire 600 MHz.
- Waiver All the A Block 700 MHz Buildout Requirements until after the Interference Concerns of AT&T are Addressed and 700 MHz A Block Devices Become Available that can Roam on AT&T and Verizon 700 MHz Spectrum.
- CMA Markets for All Available 600 MHz Spectrum.
- Spectrum Cap Conditions Set at 70 MHz of total Sub-1GHz Spectrum.
- Bidding Credits Set at 50% Nano Business and 25% Micro Business Based on

Combined Net Worth of all Investors, Members , Stockholders , Partners, and Owners listed on the bidders applications.

- Anonymous Bidders.

- Auction License Cap of 20 MHz Per Bidder Per CMA License Guaranteeing No Less than 4 winning bidders for Each CMA . If the Commission Recovers 70 MHz of Spectrum .

- Down From CH 51 600 MHz Auction Band Plan. Uplink next to CH52 Uplink with no Guard band.

- Limit AT&T and Verizon to Winning One 10 MHz Paired Block 600 MHz license Per CMA.

Respectfully submitted,

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